Comments of the Natural Resources Defense Council (NRDC) on the *Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Programs*
Assembly Bill 758 Implementation

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I. I. Introduction and Summary

The Natural Resources Defense Council (NRDC) respectfully submits these comments on the California Energy Commission's (CEC or Energy Commission) *Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Programs* (Draft Plan). NRDC is a nonprofit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that Californians demand. We represent our nearly 80,000 California members' interests in receiving affordable energy services and reducing the environmental impact of California's energy consumption.

Our comments are summarized as follows:

- The Energy Commission should include a clear inter-agency coordination and implementation strategy in the final plan.
- The final report should lay out a strategy to ensure cost-effectiveness methodologies support the plan initiatives and California's long-term GHG reduction goals.
- The Energy Commission should prioritize strategies, such as ratings, benchmarking, and data access, to provide the necessary foundation for a functioning retrofit market.
- The final plan should include an appliance and equipment standard compliance strategy in addition to enhancing building code compliance.
- The CEC should include strategies for addressing plug loads as part of the final report.

II. Discussion

NRDC appreciates the ongoing effort of the Energy Commission staff to implement Assembly Bill 758 (AB 758) and for soliciting input from stakeholders. Aggressively pursuing energy efficiency across the state is necessary to meet California's

mandates to provide affordable, reliable energy services to customers while meeting the greenhouse gas emissions limits required under Assembly Bill 32 (AB 32). We generally support the Draft Plan and offer the following recommendations to ensure that the state moves forward with implementation.

We note, however, that this process is reminiscent of similar efforts in recent years where thoughtful initiatives are established, but clear implementation plans and concrete actions do not necessarily follow suit. We urge the CEC to use this opportunity not only to adopt a strong set of initiatives, but also to include a clear strategy for implementation that prioritizes the most critical issues and moves us quickly towards accomplishing our goals.

1. The Energy Commission should include a clear inter-agency coordination and implementation strategy in the final plan.

The AB 758 Draft Plan, building upon the *California Long-term Energy Efficiency Strategic Plan*, highlights key initiatives that are necessary to capture all cost-effective energy efficiency in California and are critical to meet our state's climate goals. However, it is less clear how these initiatives will be implemented, on what timeline, and in which priority order. To ensure successful and timely implementation, we strongly urge the Energy Commission to include a strategy for implementation as part of the final plan, including a clear path for inter-agency coordination as well as establishing an implementation structure to ensure the initiatives are successfully carried out.

Establish a clear inter-agency coordination plan

Throughout the Draft Plan, the Energy Commission rightly highlights the importance of coordination between the Energy Commission and the California Public Utilities Commission (CPUC). However, there is little indication as to how that coordination will be implemented or how the CEC will coordinate with the publicly owned utilities. While informal coordination can be useful, the extent of the initiatives and strong connection to both publicly owned and investor owned utility programs is substantial and requires a concerted effort to ensure coordination is targeted, implemented, and effective. In addition, there are likely policy changes that would need

to go through the CPUC process to ensure CEC initiatives could be carried out (e.g., cost-effectiveness methodology, data access requirements, rating requirements, etc.).

At minimum, the CPUC and CEC should hold joint periodic meetings that are open to the public. At these forums, the CPUC-CEC could establish procedures to make sure there is strong coordination, report out on progress, highlight implementation issues, discuss policies that may need to be modified, and solicit stakeholder feedback. In addition, there may be issues that require a formalized joint CPUC-CEC proceeding (e.g., data access) to resolve critical policy questions. Regardless of the path chosen, the coordination should be explicit, concerted, strategic, and established in a transparent manner with clear objectives, check points, and opportunities to adjust strategies as needed.

Establish a statewide forum to support implementation of energy efficiency initiatives

The Draft Plan proposes to establish an AB 758 Working Group to address key questions (e.g., what metrics should be established to measure progress, what cost-effectiveness methodology to use, which reporting requirements, etc.). We strongly support this idea as it is the foundation of an implementation strategy. However, we urge the CEC to go even further. There are numerous working groups, action plans, initiatives, and policy goals that currently are running simultaneously without clear coordination. AB 758 is a unifying initiative that could improve integration across the numerous and often overlapping efforts, and improve the effectiveness of implementing efficiency initiatives across the state. NRDC therefore recommends that the CEC, in coordination and consultation with the CPUC, set up a statewide forum to accomplish these goals.

This forum would benefit from having a high level program steering committee to guide overarching implementation and resolve cross-cutting issues, in addition to various task-focused working groups that are responsible for determining how initiatives should be carried out. The first task of the program steering committee could be to determine which initiatives should be done in which priority order and which existing working groups could be consolidated, modified, eliminated, or if there is a need for additional groups. This steering committee should consist of representatives from the agencies, utilities (both investor owned and publicly owned), and key stakeholders, and

would be responsible for ensuring a highly coordinated, collaborative, and strategic implementation effort.

2. The final report should lay out a strategy to ensure cost-effectiveness methodologies support the plan initiatives and California's long-term GHG reduction goals.

As the Energy Commission is aware, cost-effectiveness methodologies and input assumptions dramatically influence both the design of efficiency programs and the overall level of investment in energy efficiency efforts, and can directly impact the ability of the state to meet its efficiency and climate goals. We strongly support ensuring that customer funds are prudently and strategically spent, and being too "conservative" in this regard results in a greater need for dirtier and more expensive conventional power. Properly applying cost-effectiveness tests and assuring that the Commission accurately accounts for the benefits in addition to the cost of efficiency is critical to ensure that the state is not under-investing in this important resource.

The CPUC has undertaken a concerted effort to address many technical cost-effectiveness issues raised by stakeholders over the years. We greatly appreciate this effort and look forward to our continued participation in those forums. However, some of the most important issues require policy decisions rather than simply technical analysis; the Energy Commission should work with the CPUC to make sure the state's cost-effectiveness framework at both the CPUC and the CEC supports scaling-up efficiency to meet the 2050 GHG reduction goal by fully valuing its benefits over that timeframe.

In particular, the CPUC's cost-effectiveness approach should use a lower discount rate that values long-term savings and lift the cap on expected useful lives.[1] Modifying these assumptions to better align the cost-effectiveness methodology with the state's policy goals and recognize the value of longer term savings and comprehensive

[1] Currently, savings from measures involved in whole building upgrades (e.g., window replacement, insulation, other building shell improvements) are currently capped at expected useful lives (EUL) of 20 years, but these items will likely continue saving energy for far longer than 20 years.

programs.[2] In addition, there currently is a disconnect between how the two agencies approach cost-effectiveness, most notably illustrated by the fact that the CEC uses a societal discount rate to evaluate the benefit of efficiency from codes and standards while the CPUC uses a rate between 7-8% to evaluate the savings associated with programs. The higher the discount rate, the more the analysis devalues the very long-term savings that will be essential for California to meet its long-term GHG reduction goal.

Accurately accounting for the costs and benefits of efficiency, as well as ensuring input assumptions match policy goals, is crucial to enable the state to capture all cost-effective energy efficiency. We therefore urge the Energy Commission to work closely with the CPUC to resolve the inconsistencies in approaches between the two agencies, establish a cost-effectiveness methodology for the AB 758 program that supports the statewide efficiency and climate goals, and guarantee that the cost-effectiveness methodology provides sufficient protections on customer funds without resulting in lost opportunities. Failing to adopt a proper cost-effectiveness framework for energy efficiency would result in higher customer energy bills, greater pollution, and a more expensive path to meeting the state's climate goals.

3. The Energy Commission should prioritize strategies, such as ratings, benchmarking, and data access, to provide the necessary foundation for a functioning retrofit market.[3]

The Draft Plan recognizes that any realistic path to meeting the state's long-term targets for reducing energy usage and carbon emissions must necessarily include large-scale improvements to the existing building stock. In addition, advances in technology and ever-improving understanding of the nature of energy demand continually produce new opportunities for cost-effective improvements to our existing homes, businesses, and public facilities. However, to realize fully these efficiency opportunities, the state

[2] For more information see: "Opening Comments of the Natural Resources Defense Council (NRDC) on administrative law judge's Ruling seeking post-workshop comments on demand-side cost-effectiveness issues," October 1, 2012. p. 5-7. <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M029/K552/29552729.PDF>

[3] For the purposes of our comments, *benchmarking* refers to the "operational" or adjusted metered energy use, and *rating* refers to an "asset" or simulated assessment of a building's energy use under standardized conditions.

needs a functioning competitive retrofit market and sufficient access to energy usage information to successfully target and upgrade existing buildings. In addition, program efforts will need to support customer decisions with useful tools, actionable knowledge, accurate information, and access to capital, and should facilitate streamlined delivery by contractors and other building professionals who employ well-designed, scalable business models.

The Draft Plan lays out strategies that will help energy efficiency markets move towards scaling up retrofits, but the Energy Commission must prioritize those actions that most directly support the foundational needs of creating a functioning retrofit market. These issues are not new to California. Ratings, benchmarking, data access, and the debate between voluntary and mandatory actions have been topics of conversation for many years. Now is the time for the Energy Commission to take clear and decisive action to resolve critical issues in a timely manner to scale up retrofits.

The CEC should prioritize implementation of mandatory benchmarking opportunities and resolve barriers to energy data collection and access

NRDC strongly supports the Energy Commission's focus on benchmarking of energy usage in buildings as well as the importance it places on assuring effective access to energy data, while preserving the privacy of customers as appropriate. We urge the Commission to prioritize implementation of these initiatives through the structure recommended above, as they are a critical foundation to scaling-up upgrades of existing buildings.

As the Energy Commission is aware, identifying information about energy consumption, and having access to that data, is critical to properly value energy efficiency and support investment in upgrades. Mandatory benchmarking and disclosure is needed to achieve this since voluntary programs only capture a fraction of the market, and typically only the better buildings. In reality, the most extensive opportunities lie in poorer performing buildings that use substantially more energy, which are not currently captured by voluntary actions. Mandatory policies, with consequences for non-

compliance, are needed to capture the trailing edge of poor performers and to get to scale.[4]

Another critical benefit of mandatory benchmarking and disclosure is that it provides a complete data set showing how energy is used across the entire stock buildings. This enables policy makers, utilities, stakeholders, and others to get a clear picture of how the entire building stock is performing. For example, by gathering this data in NYC, the city was able to analyze consumption patterns across building age, type, neighborhood, fuel type, etc., and use the data trends to develop policies and additional implementation strategies to capture energy savings in the existing building sector.[5]

The final Plan should include an initiative to resolve outstanding issues with the current rating system

Ratings, in addition to benchmarking, provide an important common metric by which the state can compare the energy usage of buildings and are critical to the effort of getting energy usage data integrated into building sales and financing information. By having a rating of the energy usage of the building, customers will be more likely to invest in longer term upgrades (and recoup that investment in resale value) as the rating can be used as an additional asset in a future building sale. Such an asset could be financed at the same rate as a home mortgage, which is a critical element to transforming the market for efficiency in both the existing and new building sectors.

For an effective retrofit market to work, buildings will require energy ratings that predict typical utility costs. Standard ratings are important to implement in addition to benchmarking, as measuring energy use based on bills measure the complex interaction of usage patterns, user needs, and human behavior along with efficiency. Ratings, on the other hand, quantify energy use under standardized conditions and are needed to capitalize energy savings. These ratings are required for lenders to recognize the financial

[4] For example, the poorer performing New York City buildings in each sector are using 4 to 8 times the energy per square foot as the best performing ones. These are the buildings with the most cost-effective savings potential – through improved operations and low cost upgrades. This translates into a significant opportunity to save energy. If all the large buildings in NYC came up to the average, it would reduce consumption across this sector by 18%; and if all large buildings came to the 75th percentile, it would reduce consumption across this sector by 31%.

[5] See the PlaNYC benchmarking report for more information: http://www.nyc.gov/html/gbee/downloads/pdf/nyc_ll84_benchmarking_report_2012.pdf

benefits of efficiency, for appraisers to value it so that costs can be recovered when the house is sold, and for buyers and investors to know what they are getting in terms of efficiency and thus how much they should be willing to pay for it.

While the Draft Plan references the importance of including ratings as a first step to scale-up efficiency efforts, something which NRDC agrees with, it does not include a strategy or initiative to address the long outstanding problems that California has experienced with trying to implement an existing building rating system over the past several years. The final plan should address this issue head on and include an initiative to resolve the shortcomings of the current rating system and challenges to implementation (e.g., inadequate training, quality assurance, network of raters, proper certification standards, etc.).

As a first step for home ratings, NRDC suggests that California better harmonize with the RESNET system used in over 45 other states, both in terms of label comparability, QA/QC and training standards, enforcement of ethical discipline, and regularity of updates to technical standards. For the commercial sector, most of the work for establishing a rating standard has already been done. The COMNET standard is a technical standard for ratings that has been publicly reviewed and was co-developed with the new Title 24 Nonresidential ACM manual. [6] It is also generally harmonized with the existing BEARS commercial rating system and most new commercial buildings already comply with Title 24 using the calculation-based approach. The CEC could consider extending this analysis to labeling and disclosure as needed.

Ratings are critical to support a robust retrofit market, allow customers to understand the energy usage of their building, and provide contractors with the necessary information to design the best upgrade to improve the building's efficiency. We therefore urge the Energy Commission to prioritize this issue during implementation.

[6] The COMNET technical standard is available at: http://www.comnet.org/comnet-energy-modeling-portal-live

4. The final plan should include an appliance and equipment standard compliance strategy in addition to enhancing building code compliance.

NRDC agrees with the CEC that greater enforcement of codes and standards in existing buildings will achieve energy savings and is a critical element of the existing buildings action plan. As the CEC has aptly identified, unpermitted projects are a significant issue that leads to non-compliance and lost energy savings potential, and we agree with the suggested strategies. In addition to enhancing compliance with building codes, the CEC should also include a strategy that improves compliance with Title 20 appliance and equipment standards. Making sure the equipment used *inside* the building is as efficient as possible while also meeting code is equally important as ensuring the *building* itself is up to code.

We recommend that the CEC conduct periodic checks between its certification database and the products available for sale on the market place and utilize its enforcement authority when necessary to prevent the sale of uncertified products in California. The CEC should also do checks on products certified in the database to confirm they meet existing appliance and equipment standards. Carrying out both of these efforts would greatly increase compliance and result in higher energy savings.

5. The CEC should include strategies for addressing plug loads as part of the final report.

The Draft Plan only briefly mentions plug loads in the *No Regrets Strategy 3: Foundational Marketing, Education, and Outreach Resources section*. This does not adequately represent the contribution of plug loads to existing building energy use and corresponding savings opportunities.

Plug loads represent between 20 and 30 percent of both residential and commercial energy use and are the fastest growing load in buildings. The EIA 2008 Annual Energy Outlook forecasts plug loads to grow 94% from 2005 to 2030, dwarfing the contribution and growth of traditional categories such as lighting, HVAC and water heating. Plug loads are as much an issue in existing as in new buildings, and in some

cases a bigger issue as with server closets and rooms which tend to be less efficient in existing than in new buildings.

While most appliances are now covered by both mandatory and voluntary standards, labeling and incentive programs, electronics are much less covered. Key opportunities lie in the following areas:

- Server rooms and closets
- The most energy consumptive electronics equipment such as computers, displays, network equipment, set top boxes and video game consoles.
- Standby power, particularly in the growing number of network-connected equipment.

Include server room sub-metering and energy efficiency incentive measures in Voluntary Pathways 3 (upgrades for small and medium commercial buildings) and 4 (Public Sector Leadership)

Most commercial buildings contain dozens of small server rooms sprinkled throughout tenant offices, which use large amounts of power around the clock. Server rooms and closets house the computer servers, data storage, and networking equipment that power many businesses, from media to technology, legal, financial, and many other sectors. A server room can be responsible for 30 to 50 percent of an office-based organization's entire energy use.

Deep and cost-effective energy savings opportunities, of the order of 80 to 90 percent energy savings, exist in most server rooms. We recommend that the final plan include a strategy to target server room efficiency in existing buildings, which could include encouraging and/or mandating sub-metering of server rooms and ensuring all customers have access to utility incentive programs to support server room energy efficiency upgrades.

Add a Voluntary Pathway to develop utility incentive programs for high energy consumptive electronic equipment

Other electronic equipment such as TVs, computers, displays, network equipment, set top boxes and video game consoles represent approximately 10 percent of residential and commercial building energy use. While TVs are now covered by both mandatory and voluntary measures, this is not the case for the other high energy consumptive electronics. The Plan should support efforts currently under way at the

Energy Commission to set minimum efficiency standards for this equipment. It should also investigate measures and work with the CPUC, utilities, and interested parties to facilitate the implementation of incentive programs in this fast moving technology area.

Add a No Regret strategy to support and accelerate energy efficiency standards for electronics equipment and standby power

Electronic equipment and appliances that increasingly include electronic controls and displays use power around the clock, even when not performing their primary function. This standby power results in 5 to 10 percent of annual building energy use. Standby energy is growing rapidly due to the growth in electronic equipment and the increase in the number of devices that are connected to the network, from computers and game consoles to smart-grid enabled appliances. The final plan should accelerate the Energy Commission's schedule to set standards for standby power.

III. Conclusion

NRDC appreciates the opportunity to provide these comments and looks forward to working with the Energy Commission and interested parties to ensure the initiatives in the plan are successfully implemented.